



MARSHALL STAR

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Sept. 4, 2003

Marshall Director David King praises Columbia report

'Time to get to work' director tells Marshall team

Editor's note: Following is Marshall Director David King's address to Center team members Aug. 27, the day after the Columbia accident report was released.

Yesterday, the Columbia Accident Investigation Board released its report regarding the loss of STS-107.

"We are grateful to the Board for its tireless efforts to identify the causes behind the accident and I think the report is outstanding.

"The Board's report will provide valuable insight for bringing about necessary change. We will comply with their recommendations and become stronger in the process.

"We have been in lock-step with the Board since day one. We have made substantial progress already and will continue to make the changes necessary to ensure safe space flight.

"Even now, we have an implementation plan in place that is our road map for dealing with these recommendations and we will continue to update that plan as we learn things along the way.

"Make no mistake, this report is tough. However, the unanimous support from the entire board that human space flight should continue is an indicator of the support we will see in the coming months.

"The American public also is with us. I witnessed this firsthand during the recovery effort in Luftkin, Texas.



Marshall Director David King, right, meets with Huntsville-area news media after the Columbia Accident Investigation Board report was released last week.

Photo by Doug Stoffer, NASA/Marshall Center

"I've never been more proud to be a part of the NASA team. We are fortunate to have a very dedicated and talented workforce.

"So, we will stand together -- shoulder to shoulder -- as we work hard, communicate with each other, and pursue our goal of return to flight. We owe it to the crew, their families and to this nation.

"Let's get to work."

— **David King**
Marshall Center Director

Marshall Family Fun Day
will be 10 a.m. - 2 p.m.
Sept. 20, at the MSFC
Picnic Grounds. All civil
servants, contractors,
retirees and their
families are invited. See
page 6.

NASA working to take guesswork out of long-term drought prediction

by Sherrie Super

It's tricky, this weather business — predicting drought, floods, rain or snow, especially months in advance. But NASA scientists at the National Space Science and Technology Center in Huntsville are working to take the

guesswork out of long-term prediction.

"We're researching methods to predict precipitation a season or more in advance," said Dr. Bob Oglesby, a senior atmospheric scientist at the research center.

See **Drought** on page 2

Drought

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The key, according to Oglesby, is understanding how the atmosphere interacts with the land — sometimes in a way that completely alters the expected climate of a geographic area.

“The Gulf of Mexico, for example, is what keeps the Southeast from becoming semi-arid, or in the worst-case scenario, a big desert,” Oglesby said, explaining that atmospheric flow sweeps primarily from west to east. Without the gulf, states like Alabama, Tennessee and Georgia would be forced to seek moisture from the Pacific Ocean. “But a series of mountain ranges blocks the way,” he said. “If it weren’t for the nearby gulf, the lush, green landscapes of Southeast might more closely resemble the semi-arid landscapes of the great plains.”

Just as mountain ranges can block moisture from an entire region, ridges of atmospheric pressure act as similar obstacles — blocking out much-needed moisture where conditions are dry, resulting in a “thermal mountain effect,” first identified in 1953.

“Droughts are self-perpetuating,” Oglesby said. “If an area is already experiencing drought conditions, it is more likely to continue in a drought. Similarly, if an area is experiencing an extremely wet condition, that trend is also likely to continue.”

This self-perpetuating cycle is due to the interaction of moisture in the soil with the atmosphere. If the amount of rain or snowfall drops below average, the soil becomes dry. Then, as the Sun heats the Earth, less moisture is available for evaporation.

With the resulting reduction in evaporation — and its cooling effects — the surface of the Earth warms, heating the atmosphere. As the atmosphere’s temperature increases, air rises. This cycle reinforces the ridge of high pressure, enhancing its abilities to block the flow of moisture from bodies of water as well as reducing the likelihood of thunderstorm formation.

Drought conditions also may be predicted by studying other factors, including sea surface temperature variations such as those associated with ocean warming effects from El Niño, and ocean cooling effects from La Niña; north Atlantic oscillation, or air flow; and snow cover in surrounding regions.

Oglesby’s research uses computer models to simulate and predict weather conditions, using data such as soil moisture, precipitation and Earth’s surface temperature. The biggest

challenge in making long-term predictions, he said, is a lack of sufficient data on soil moisture, especially moisture in lower layers of the soil.

“If someone could provide us with the state of soil moisture over a sufficiently large area, we can begin to predict its impact on precipitation over the next season or two,” Oglesby said.

Oglesby sees hope for better data in the future from NASA remote sensing technology that gleans information using satellite or flights over select areas.

Above-average rainfall or snow in the winter or spring can increase soil moisture to levels needed to help break the cycle of drought. But an average series of short, light rain showers — common in much of the South — are not generally enough, said Oglesby. “Even though



Dr. Bob Oglesby

Photo by Doug Stoffer, NASA/Marshall Center

surface soil may be wetted periodically, light rains may not drop enough moisture to reach lower soil areas. These perpetually dry areas, in turn, cause top soil to dry more quickly — once again hindering the Earth’s natural cooling process.”

But there is hope even in the midst of drought conditions. “Even in a dry, Alabama summer, it rains,” said Oglesby, noting that large-scale circulation and thunderstorms in the summer can also break the cycle of drought. “The trick,” he said, “is replenishing the moisture in the soil before it’s too late.”

From the Marshall Center, Oglesby has co-authored three research papers since 2001, published in the “Journal of Climate” and the “Journal of Geophysical Research.” Topics include diagnosing warm season precipitation, thresholds in atmosphere-soil moisture interactions and the predictability of winter snow cover over the Western United States.

Oglesby has a bachelor’s degree in physical geography from the University of California in Davis and a doctorate in atmospheric dynamics from Yale University in New Haven, Conn. He is based at the Global Hydrology and Climate Center, one of seven science research centers at the National Space Science and Technology Center, a partnership with the Marshall Center, Alabama universities, industry and federal agencies.

The writer, employed by ASRI, supports the Media Relations Department.

Outstanding women achievers honored

from the Equal Opportunity Office

Four outstanding women achievers from the Marshall Center were honored last week during Women's Equality Day ceremonies.

Guest speaker was Shelley Thomas of the Office of Personnel Management.

Each honoree received a Director's Commendation award.

The Marshall Center's Outstanding Women Achievers are:

- Professional -- Dawn C. Stanley, Logistics Services Department
- Administrative -- Ela M. Washington, Employee and Organizational Development Department
- Clerical -- Barbara V. Thurman, Flight Projects Directorate
- Federal Women's Program Supervisor of the Year -- Ann R. McNair, Ground Systems Department

Nominations were solicited and received from across the Marshall Center. A panel of their peers individually ranked the winners.



Stanley

Photos/Marshall Imaging Services



Washington



Thurman



McNair

Space flight demonstrator completes design certification

by Amie Cotton

The Demonstration for Autonomous Rendezvous Technology (DART) spacecraft, recently completed design certification review for the Orbital Space Plane (OSP) program.

The OSP is a NASA initiative to develop a crew rescue and transfer vehicle for the International Space Station.

DART is a space flight demonstrator designed to test technologies required for the OSP to locate and rendezvous with the Station. The DART is designed for autonomous operations. DART is controlled by computers, and it does not have a pilot. DART is NASA's first completely computer controlled, rendezvous-capable spacecraft.

The design certification review is a lengthy technical analysis to verify the vehicle design with regard to safety, performance and functional requirements. The review evaluates the results of the project's planning and analysis throughout manufacturing, integration, and testing. The review is conducted when the vehicle design and drawings are complete.

The review is a key accomplishment for the DART team," said Jim Snoddy, DART program manager at the Marshall Center. "The team is pressing ahead to ready the vehicle for a

2004 launch. DART's demonstration of autonomous rendezvous technologies will be key for the development of the OSP and future reusable launch vehicles."

Developed by Orbital Sciences Corp. of Dulles, Va., the DART will be launched on a Pegasus rocket from an L-1011 jet aircraft. At approximately 40,000 feet over the Pacific Ocean, the Pegasus will be released with the DART spacecraft.

Once the DART vehicle is launched, some of the hardware and software tested will enable it to travel from a parking orbit around the Earth to rendezvous, or maneuver close to, a target satellite in space. When DART reaches the satellite, it will perform several close proximity operations. The entire 24-hour mission will be performed without a human pilot.

The DART is the first of three flight-testing demonstrators. Other demonstrators for the OSP program include the X-37 flight demonstrator developed by Boeing Expendable Launch Systems of Huntington Beach, Calif., and the launch pad abort demonstrator developed by Lockheed Martin Corp. of Denver.

For information about NASA's OSP Program on the Internet, visit <http://www.ospnews.com/>.

The writer, an employee of ASRI, supports the Media Relations Department.

NASA scientist finds new species of organism in Mars-like environment

by Sherri Super

They thrive without oxygen, growing in salty, alkaline conditions, and may offer insights into what kinds of life might survive on Mars.

They're a new species of organism, isolated by scientists at the National Space Science and Technology Center in Huntsville.

The discovery identifies a species named *Spirochaeta Americana* by two NSSTC scientists — Richard Hoover and Dr. Elena Pikuta. They isolated this new organism from oxygen-deprived mud sediments from Northern California's Mono Lake - a salty, alkaline lake in an enclosed volcanic basin that Hoover believes may offer new insights into potential life on Mars.

The microorganism, a long, thin bacterium, is an extremophile — an organism that can survive in some of the harshest conditions on Earth. Although there are vast numbers of bacteria and archaea, only about 6,000 species have been described and validly named and only a small fraction of them are extremophiles.

Like the recently discovered species,

several other *Spirochaeta* are extremophiles. "The environment these bacteria inhabit would be distinctly inhospitable to many other life forms, including humans," Pikuta said. Humans and other multicellular organisms need oxygen to survive. *Spirochaeta Americana* grows in the absence of oxygen. Humans drink fresh water, while this organism thrives in high-mineral, salty environments. On the pH, or acidic-alkaline, scale of 0-14, humans prefer a mid-range between 6.5 and 7.5, while this organism prefers 8.0 to 10.5.

Since the first species of the genus *Spirochaeta* was discovered in 1835, only

NASA, Marshall team members receive Integrated Financial Management awards

More than 350 NASA and Marshall team members were honored during Integrated Financial Management Program awards ceremonies last week.

Michael B. Mann, director of the NASA Integrated Financial Management Program, was guest speaker.

Both NASA awards and Marshall Center awards were presented.

A reception was held in the Bldg. 4200 lobby after the ceremonies.



Mann

Photo by David Higginbotham, NASA/Marshall Center

13 other species of free-living spirochetes have been found worldwide, inhabiting environments ranging from sediments to oil fields.

"These extremely thin and graceful bacteria move with an elegant motion," Pikuta said. "Their cell walls are very delicate, and it is difficult to keep them alive for long periods in the laboratory."

The most ancient life forms on Earth, extremophiles can thrive in acid pools, super-heated volcanic vents, glaciers, nuclear reactor wastes, at high pressure and absolute darkness in deep-sea abysses and in rocks far beneath the Earth's crust — conditions that would be lethal to most other living things.

Many also survive without oxygen. "While life requires liquid water and energy, it doesn't always require oxygen," Hoover said.

In fact, strictly anaerobic microorganisms like *Spirochaeta Americana* cannot live in the presence of oxygen, offering encouragement to scientists who study biology with an eye trained beyond our home planet.

See *Organism* on page 6



Photo by David Higginbotham, NASA/Marshall Center

Marshall Director King visits Oakwood College

Marshall Director David King, left, visits with Oakwood College President Dr. Delbert Baker during a recent tour of the institution. Oakwood partners with Marshall to develop educational excellence among students and to inspire the next generation of scientists and engineers.

Marshall team member narrates tale of murder

Alan Grady to sign copies of just-published book

by Jonathan Baggs

Year after year, Alan Grady sat in bleachers watching his children play youth league sports, but his mind wasn't on the games. He was thinking about murder.

Those thoughts finally coalesced into Grady's book "When Good Men Do Nothing: The Assassination of Albert Patterson," published in July by the University of Alabama Press.

Grady, 47, a records specialist at Marshall's Documentation Repository, will sign copies of his book Friday from 4-6 p.m. at Shaver's Books on Whitesburg Drive in Huntsville.

His book tells the story of the June 18, 1954, assassination of former State Sen. Albert Patterson, the Democratic Party's nominee for state attorney general. Patterson was shot down as he left his law office in Phenix City – a town infamous for its prostitution, gambling, bootlegging and political corruption. Patterson had made the cleanup of Phenix City his primary campaign promise.

The shooting triggered a massive state investigation to clean up the town and propelled Patterson's son, John Patterson, into office as the state attorney general in his father's place. John Patterson would go on to be elected governor while "The Columbus Ledger" newspaper won a Pulitzer Prize for its coverage of the crime and aftermath.

Grady's book is seen by some as casting doubt on whether two suspects indicted for Patterson's murder were actually responsible for the crime. Russell County Deputy Sheriff Albert Fuller was convicted, but Russell County Circuit Solicitor Arch Ferrell was acquitted and maintained his innocence.

Although the book was scheduled for publication more than a year ago, it was held up after John Patterson objected to some of the content.

Sitting in his office at Marshall, where posters from the 1955 film "The Phenix City Story" hang next to his children's grade-school artwork, Grady said he knew there would be some material in the book that Patterson wouldn't like.

"His objections didn't come as a surprise," Grady said. "I just didn't expect them until after the book was published. I hate it that Gov. Patterson isn't happy, but I have to write it the way I see the facts."

His publishers stuck by Grady, he said, but sent it through another review process. "I think they were a bit concerned at first. I mean, after all, a former governor, as you can imagine, is quite intimidating, so yeah, they caught some flak, but ... it's not just a matter of accuracy, it's the whole principle of freedom of the press and the right to publish things that powerful people would rather not have published. In the process, it became a better book."

Grady changed a few things that Patterson objected to as long as the changes didn't alter the meaning of the book. "Some things, on the other hand, just couldn't be changed without significantly changing the story. In those cases, I didn't change anything," Grady said.

The book is written in narrative form and took 10 years to research and write. Grady went through 21 boxes of attorney general's files and several primary sources of information that, until recently, have not been made public. These included FBI files and records of the Alabama National Guard, which took over police duties in Phenix City after the murder.

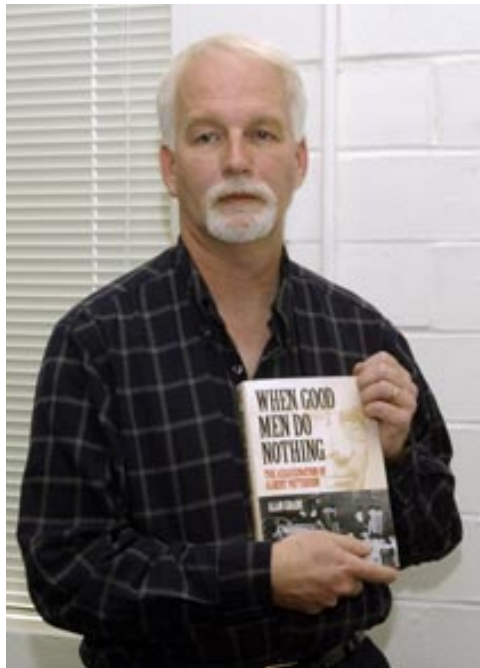
"Tracking down individuals was a little harder, but not impossible," Grady said. "My biggest problem was that many of them had passed away, but that's what happens after 50 years."

Grady has also published articles in "Alabama Heritage" magazine and traces his love of history back to his parents. "They taught me to know and respect my ancestry and, therefore, the past," he said.

Although he has a study at home, Grady said most of the actual writing for the book took place at various ball fields and gymnasiums as his children participated in sports. "You'd be surprised how much work you can get done during halftime or even between pitches," he said. "I never went anywhere without a notebook and a pencil. I could have written it in less time if my kids had sat on the bench more."

Grady lives in the small community of Union Hill in Morgan County. He's already planning another book or article on the relationship between John Patterson and President John Kennedy. Speaking of another book focusing on the Patterson family, Grady paused, and said, "Maybe I haven't learned my lesson yet."

The writer, an employee of ASRI, is editor of the Marshall Star.



Grady

Photo by Doug Stoffer, NASA/Marshall Star

Organism

Continued from page 4

"Since other bodies of the Solar System lack our oxygen-rich atmosphere, microorganisms that thrive without oxygen are good candidates for astrobiology research," Hoover said. "If, or when, we find life on other planets, our first discoveries will probably be microorganisms."

"The goal of astrobiology is to answer the question of whether life exists exclusively here on Earth, or is widely distributed throughout the universe," Hoover continued. "Planets like Mars

have conditions that would challenge the existence of highly organized multicellular organisms such as we find on Earth, but that doesn't mean these harsh places can't sustain microbial life forms. By studying microorganisms found in Earth's extreme places, like Mono Lake, we can better understand how life might exist on Mars."

Covering a 70-square-mile area, Mono Lake is a terminal lake, meaning water does not flow through it. Instead, water enters the lake from hot alkaline springs, rainfall and streams and leaves only by evaporation. As water evaporates, it leaves

behind chemicals that have become more concentrated over thousands of years and many of the minerals present are formed through microbial activity. As a result, its water is twice as salty as seawater and extremely alkaline, with a pH of 10.

Hoover is an astrobiologist at the Marshall Center and Pikuta is a microbiologist with the Center for Space Plasma and Aeronomy Research Laboratory at the University of Alabama in Huntsville.

The writer, employed by ASRI, supports the Media Relations Department.

Obituaries

James L. Corbitt, 70, of Albertville, died Aug. 23.

He retired from the Marshall Center in 1994, where he was a supervisory contract specialist.

Corbitt is survived by his wife, Sarah K. Corbitt.

John Wade Perry, 63, of Athens, died July 17. Burial was in Limestone Memorial Gardens with Spry Funeral Home directing.

He was born June 2, 1940, in Limestone County. He was an elder at Tanner Church of Christ, a retired U.S. Army veteran and retired from the Marshall Center in 1995 where he worked as a computer specialist.

Perry is survived by his wife, Betty Perry; two daughters, Alison Wooten of Elkmont and Alyssa Sandberg of Athens; his mother, Verna Perry of Athens; one brother, Gerald Perry of Athens; two sisters, Jane Greene of Athens and Sandra Hogan of Malaysia; and three grandchildren.

Maxime L. Smith, 83, of Huntsville, died Aug. 20.

He retired from the Marshall Center in 1980 where he was a contract specialist.

He is survived by three children.

Walker Teal, 80, of Guntersville, died Aug. 15.

He retired from the Marshall Center in 1985 where he worked as a property disposal officer.

Marshall Director David King invites Center team to Family Fun Day

Our Marshall Family Fun Day is just around the corner!

I want to encourage you to mark your calendar for this fun-filled day. Although this will be my first Marshall picnic, my excitement and anticipation of this event is fueled by the many stories I have heard about picnics past – especially the stories of Marshall managers taking the plunge in the dunking booth!

The NASA team, both civil servants and contractors, has been through a trying time this year. As we prepare for Return to Flight and face the challenges ahead, I believe that as a workforce family, it is important that we come together for a time of fellowship and relaxation.

The picnic will kick off with a 5K fun run at 8 a.m., followed by the children's parade at 9:45 a.m.

I am looking forward to bringing my family to this event. The thought of a festive atmosphere with midway games, the sound of music echoing through the tall pines and the smell of cotton candy and hot dogs will make the perfect setting for all of us – family, friends and coworkers – to create lasting memories.

Mark your calendar for Sept. 20.

See you there!

— **David A. King**
Marshall Center Director

Job Announcements

MS03C0179, Program Analyst. GS-0343-12, Science Directorate, Business Management Office. Closes Sept. 5. Contact: Debbie Longeddy at 544-2308.

MS03C0181, AST, Technical Management. GS-0801-13, Second Generation RLV Program Office, Program Planning and Control Office. Closes Sept. 8. Contact: Patricia Caraway at 544-7755.

MS03D0182, AST, Liquid Propulsion Systems. GS-0861-11, Space Shuttle Propulsion Office, Space Shuttle Main Engine Project. Closes Sept. 8. Contact: Edwina Bressette at 544-8115.

MS03C0185, Budget Analyst. GS-0560-12. Three vacancies of one each in Systems and Processes Office (RS30), Institutional Operations Office (RS50), and Budget Integration Office (RS60). Office of the Chief Financial Officer. Closes Sept. 15. Contact: Dana Blaine at 544-7514.

Center Announcements

SEE Program to host Spacecraft Charging Technology Conference

NASA's Space Environments & Effects Program will host the eighth Spacecraft Charging Technology Conference Oct. 20-24 in Huntsville. The conference is an international forum to present and discuss spacecraft charging issues and mitigation techniques. Registration is limited. For more information, go to <http://see.msfc.nasa.gov/sctc>.

Spacecraft Preliminary Design course set for September

A three-day Spacecraft Preliminary Design course will be taught Sept. 15-17 by Dr. Wiley Laron and Tom Sarafin at the Marshall Center. Marshall team members interested in attending should submit a Form 59 to CD20 by Aug. 27. For more information, go to www.instarengineering.com/uss.cfm or call 544-1164.

Flag football teams organizing

Men's and women's flag football season will be starting soon. If you are interested in starting a team, call Dayna Schoffstoll at 544-4123 or Kathryn Kynard at 544-7439.

LifeSouth monthly blood drives to begin Sept. 12

Beginning Sept. 12, the Huntsville LifeSouth Community Blood Center will be added to the Marshall Blood Drive Program. LifeSouth's monthly blood drives will be on the second Friday of each month from 8 a.m.-1:30 p.m. at the Center Activities Bldg. 4316. The American Red Cross will continue to hold its blood drive at Marshall on the third Friday of each month. For more information, call Rick Wallace at 544-8885.

MARS Tennis Club Closed Hi-Lo Doubles Tournament is Sept. 6

The MARS Tennis Club Hi-Lo Doubles Tournament will be Sept. 6. Warm-up begins at 8 a.m. with tournament play at 8:30 a.m. Players will be matched with a doubles partner at the tournament.

The closed tournament is for members only. If you plan to participate, or for more information, call Bill Boglio at 544-3806.

New requirements for support of special events

Marshall Center organizations planning a special event either on or off the Center requiring Marshall services must initiate the request via the Web-based Service Request System on Inside Marshall. Go to One-Stop-Shop, then Service Request System, Special Event Services. Please submit requests as far in advance as possible, but at least 10 working days prior to the event. Organizations are required to fund the services requested. For more information, call Craig Young at 544-3239.

Society of Women Engineers planning Sept. 17 meeting

The Society of Women Engineers will meet at 11:30 a.m. Sept. 17 at Sister Gooch restaurant at 382 Slaughter Road in Madison. Dr. Deason Dunagan from Dunagan, Yates and Alison Cosmetic Surgery Center in Huntsville will discuss "Collagen/Photo Rejuvenation." Members and guests are welcome. For more information, call Helen Stinson at 544-7239.

Proposal production assistance available

The Center Operations Directorate's Proposal Production Team (PPT) is available for assistance in preparing proposals. The PPT can schedule coordination, guidelines, text editing, figure and table production, layout, camera-ready art and coordinate printed products. For more information, go to <http://co.msfc.nasa.gov/ad03/graphics/proposal.html> or call 544-4852, 544-4580 or 544-4741. The PPT is in Bldg. 4200, Room G-28.

NASA Ski Week set for January

The 13th annual NASA Ski Week will be in Steamboat, Colo., Jan. 24-31, 2004. Skiers from nine NASA centers will participate in winter sports and camarade-

rie at the 3,000-acre resort. All Marshall team members, retirees and family members, are eligible to participate. For more information, call 233-0705 or e-mail tom.dollman@nasa.gov.

Theatre Huntsville discount tickets available

The NASA Exchange is offering discount tickets to Theatre Huntsville's fall performances of "The Secret Affairs of Mildred Wild" at the Von Braun Center Playhouse. Shows are at 7:30 p.m. Sept. 12-13 and Sept. 18-20, and a 2 p.m. show on Sept. 14. Discounts are \$1 per ticket on up to four tickets. Marshall team members should show their badge at the box office to receive the discount. To reserve seats, call 536-0807. For information, call Candy Kelley at 544-7565.

ViTS Software Engineering Telecon will be Sept. 23

A ViTS Software Engineering Technology Infusion Telecon will be from 2:30-3:30 p.m. CDT Sept. 23. Marshall team members, civil servant and contractor, who have the responsibility and authority to collaborate on infusing software engineering tools and technology into new or existing software development or maintenance activities are invited to attend. Seating is limited. To register, go to <http://ic.arc.nasa.gov/reg/>.

Marshall Retail Store for customer supplies is open

The new Marshall Retail Store in Bldg. 4752 is now open from 7:30 a.m.-4:30 p.m. weekdays with special hours available upon request. A new Web-based ordering system has replaced the old system. More than 12,000 items are available to Marshall team members. The Marshall Retail Store will only accept government and corporate credit cards and purchase orders from authorized customers. For details, see "Inside Marshall" or call Skip Hayes at 544-8073 or Bob Adams at 544-5523.

Classified Ads

Miscellaneous

- ★ Prom dress, pale pink w/clear sequins, size 7, \$60. 509-6590
- ★ Multi-colored love seat recliner/rocker, \$75; two wooden rocking chairs, \$25 each. 837-2223
- ★ 1997 Viking popup, a/c, sleeps six, extras, \$3,500. 256-828-7013
- ★ Two tickets, Huntsville Symphony Orchestra performance, Sept. 20, center seats, Row Q, \$42 each. 256-722-7927
- ★ Firm Body Sculpting System 2 set, \$75. 653-9823
- ★ Green Bay Packers reversible nylon jacket w/hood, never worn, youth size/ladies small, \$18. 880-7490
- ★ Compaq JBL Pro speakers, \$20; Labtec LCS-800 speakers, \$10; Compaq Presario monitor, \$30. 468-5242
- ★ Viking-Rose sewing machine, embroidery unit included, \$700. 881-3353.
- ★ Electric start riding mower, 36" cut, 8HP, \$75. 881-2272
- ★ Lab puppies, AKC registered, chocolate, yellow, & black available, \$150. 256-574-0600
- ★ AKC German Shepherd puppy, 8-months old, black & tan, w/shots, \$250. 256-694-5912
- ★ Dinette set, round glass top w/brass bottom, mauve upholstery, \$40. 464-3344
- ★ Queen mattress set and frame, \$100. 536-5132
- ★ Black metal desk, faux wood top, w/swivel chair, \$150; Sears lawnmower, won't start, \$20. 883-5168
- ★ Small painted wood study desk w/7 drawers, \$40; matching corner shelves, \$10. 256-533-4824
- ★ Two Hank Williams, Jr. concert tickets, Sept. 20, Tusculumbia, AL \$40 each. 256-858-6746
- ★ Portable workshop/storage building, 10'x14', aluminum exterior, windows, light, power outlets, \$1,400. 256-880-7889
- ★ Bose AM-5 w/center speaker \$225; JVC RX-815V receiver, \$100. 256-461-3607
- ★ Monkey grass (Iriope), solid green leaves, blue flowers, \$1/plant, \$75, \$100 plants. 256-426-4325
- ★ VHS movies: children's, action, romance, Cocktail, Bachelor Party, Addams Family, more, \$5 each. 256-830-1844
- ★ Men's Diamond Back Sorrento bicycle,

- includes car rack, \$200. 256-355-3227
- ★ Queen waterbed, 8-drawer pedestal, cushioned side rails, heater, mattress, and cover, \$275. 256-882-9808
- ★ Antique iron twin bed, mattress/bedding, \$250; loveseat, \$200. 256-498-6580
- ★ Craftsman bench-top starter router table, 3 wks. old, \$30. 881-0755
- ★ Coach handbag, large, black leather, brass trim, \$100. 256-757-0469
- ★ Remington 12-gauge auto-loader, Sportsman Model 58, 28" barrel, modified, \$150. 536-4506
- ★ Adjustable basketball goal, 10', \$50. 256-532-5128/Lesley or Shelby
- ★ Wedding gown w/train/veil, size 6, \$200; long red evening gown, halter, size 5, \$75. 881-8674
- ★ Gravely tractor, 12HP, Kohler, extras, \$500. 830-5663
- ★ Dining room set, 40x60 table, 2-leaves, 6-padded chairs, china cabinet. 797-1788
- ★ Table saw, 1HP motor, \$200. 534-5398
- ★ NordicTrac 530 Pro, electronic panel, pulse monitor, \$250; Oklahoma Joe Bar-B-Que/Smoker, \$250. 881-4105
- ★ Two piece hutch, \$100; Oak desk, \$40. 256-828-7013
- ★ Old school portable record player in flip-top case. Works good, needs needle. \$10. 306-0700.

Vehicles

- ★ 2000 Mazda 626, 4-door, 41K miles, silver w/gray interior, PS/PB/PB/PL, AM/FM/CD cassette, a/c, \$9,950. 256-230-0806
- ★ 2003 Mercury Grand Marquis LS, Ultimate Edition, heated leather seats, 1,800 miles, factory warranty. 852-6952
- ★ 1997 Nissan truck XE, 4x4, 5-speed, a/c, \$5,400. 325-6000
- ★ 1999 Oldsmobile Alero, 2-door, 40K miles, automatic, V6, leather, spoiler, sunroof, \$8,000. 655-5310
- ★ 1999 Toyota Sienna XLE, 75K miles, black, V6, air, sunroof, roof rack. 883-0009 after 5 p.m.
- ★ 1992 Nissan Stanza XE, 147K miles, all-power, tilt, cruise, Michelins, \$1,800. 468-3749
- ★ 1992 Hi-Top Chevrolet conversion van, 80K miles, AC, TV/VCR, cassette, \$4,500. 256-776-3836

- ★ 1993 Chevrolet C1500 ext. cab, 5.7L/V8, red/silver, bedliner, hardcover, bucket seats, center console, \$5,950. 256-722-9274
- ★ 1996 Oldsmobile Cierra wagon, 62.5K miles, blue/gray, A/C, cruise, PS/PW/PL/PB/ABS, AM/FM tape, \$4,250. 256-337-4082
- ★ 1995 Dodge Caravan SE, automatic, 163K miles, blue w/gray interior, V6, \$2,500. 256-880-3337
- ★ 1996 Honda Accord EX, automatic, 4-door, loaded, sunroof, alloy wheels, 215K miles, \$3,950 firm. 256-753-2278
- ★ 1990 Honda Accord EX, sunroof, power windows/locks/steering, \$3,000. 256-426-7038
- ★ 1989 Nu-Wa HitchHiker, 31', 5th wheel, RV, sleeps 6, \$8,250. 776-4741
- ★ 1987 Nissan Sentra, 5-speed, 4-door, \$600. 256-233-3215
- ★ 1969 Chevelle SS, 396, new grooms 396 engine, \$7,500. 256-859-3136
- ★ 1965 MG-B convertible, \$2,800. 256-864-8474
- ★ 1997 Nissan Maxima SE, 4-door, 82K miles, pearl, alloy wheels, sunroof, automatic, AM/FM/CD, \$9,490. 881-8674
- ★ 1988 Class C motor home, 23', 350 Chevrolet, sleeps 4, 33K miles, \$5,000. 536-4506
- ★ 1991 Explorer XLT, 63K miles, 4-door, V6, leather, sunroof, \$6,000. 880-6498

Wanted

- ★ Carpool with anyone from Birmingham area, all week or 3 days of week. 544-0574
- ★ Roommate for house in Harvest, 12 miles to Gate 9, \$450/month, includes all. 256-864-8474
- ★ Bunk beds. 256-653-5374
- ★ Zip Drive for PC. 256-883-2757
- ★ Brass tuba for student. 256-882-0831

Free

- ★ Female Chow/Retriever mix, spayed, very gentle, all shots, needs good home, fenced yard. 256-652-0379
- ★ Female part lab mix dog, 3 years old, all shots, spade. 256-430-0759

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